

(21) Application No 9103787.9

(22) Date of filing 22.02.1991

(30) Priority data

(31) 02018112

(32) 23.02.1990

(33) JP

(71) Applicant

Mitsubishi Pencil Co Ltd

(Incorporated in Japan)

No. 23-37 Higashi Ohi 5-chome, Shinagawa-ku, Tokyo,  
 Japan

(72) Inventor

Masaki Uchida

(74) Agent and/or Address for Service

D Young and Co

10 Staple Inn, London, WC1V 7RD, United Kingdom

(51) INT CL<sup>6</sup>

B43K 8/14

(52) UK CL (Edition K)

A4K KBA K158 K162

U1S S2258

(56) Documents cited

None

(58) Field of search

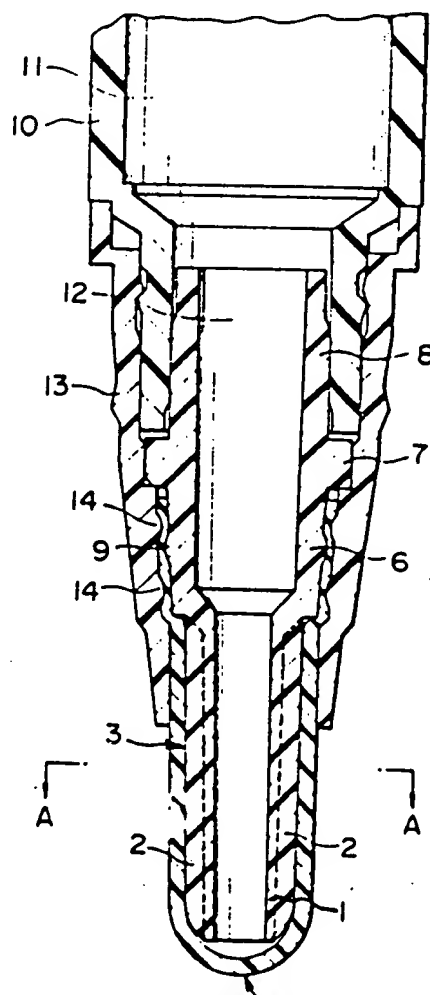
UK CL (Edition K) A4K KBA KFX

INT CL<sup>6</sup> A46B, B43K

(54) Liquid applicator

(57) A liquid applicator has a porous cover member (4) for absorbing and applying ink. The ink is supplied from a reservoir (11) via a guide hole (12). Longitudinal ribs (2) are provided in order to form grooves (5) so that the ink may be distributed along the length of the cover member (4) and in order to give the cover member (4) a non-circular cross-section with wide and narrow sides for drawing wide and narrow lines.

FIG. 1



241 747 1

FIG. 1

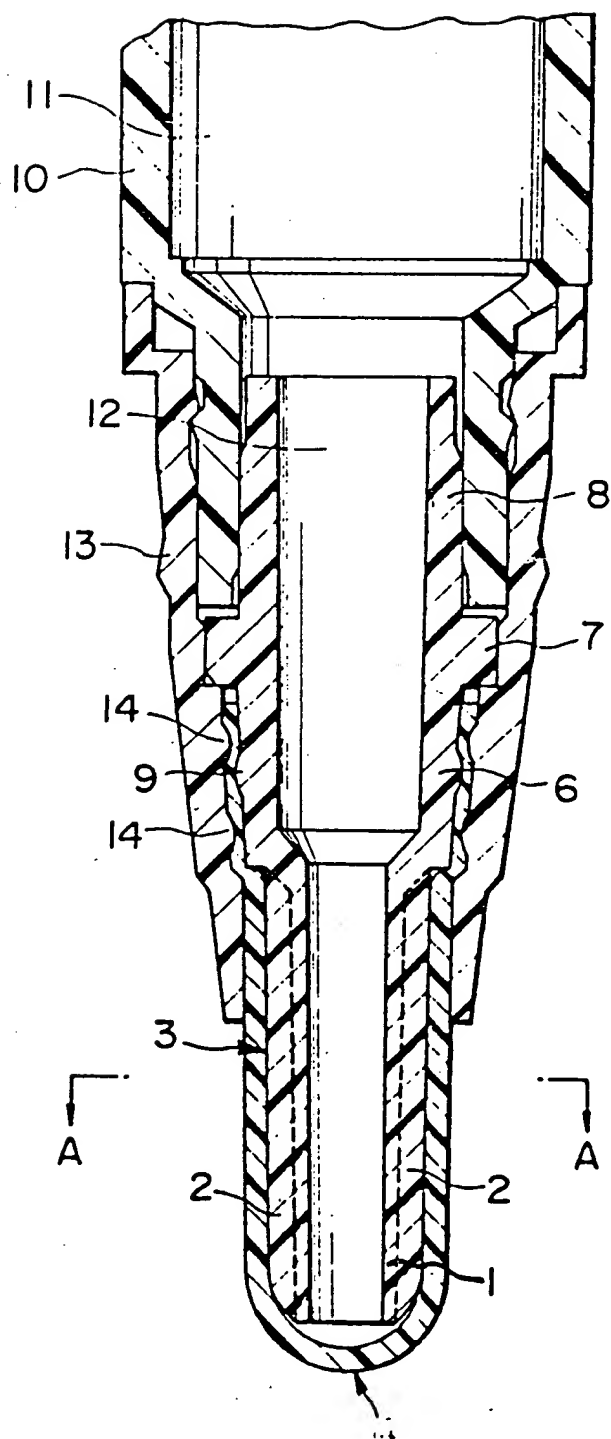


FIG. 2

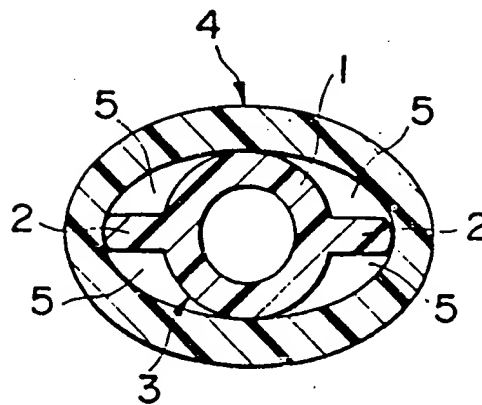
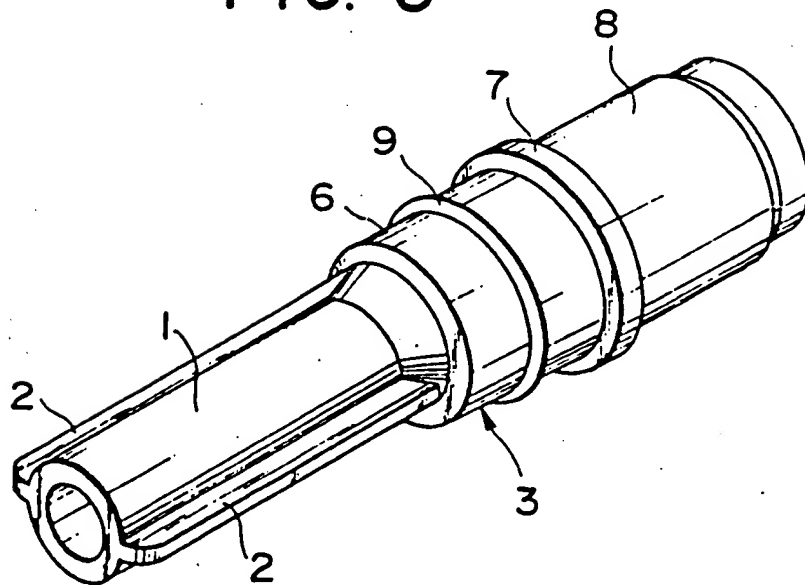


FIG. 3



## LIQUID APPLICATOR

The present invention relates to a liquid applicator such as a cosmetic applicator for applying a liquid cosmetic, or a writing instrument containing a writing ink.

A known liquid applicator comprises a pipe-like penpoint core member of circular cross-section and a penpoint cover member made of an elastic porous material and slid over the core member. Unfortunately, it is not possible to paint both a broad line and a narrow line and it is difficult for the discharged liquid to spread up to the rear part of the penpoint cover member remote from the front end outlet of the penpoint core member from which it is discharged.

The present invention aims to overcome the above defects.

According to the present invention, there is provided a liquid applicator for applying a liquid, comprising:- a core member having a tubular pipe portion with a mouth for discharging the liquid and at least one rib mounted on the outer surface of the pipe portion and extending longitudinally thereof in order to define at least one groove for carrying the liquid away from the mouth of the pipe portion; and a cover member made of elastic porous material and located over the outer surface of the core member for absorbing the liquid directly from the mouth of the pipe portion and indirectly via the groove(s).

The invention will now be described by way of a non-limiting embodiment with reference to the accompanying drawings, in which:-

Fig. 1 is a vertical section of a main portion of a liquid applicator in accordance with the present invention;

Fig. 2 is a cross-sectional view taken along line A-A in Fig. 1; and

Fig. 3 is a perspective view of a penpoint core member of the applicator of Fig. 1.

A penpoint core member 3 is made of plastics material and has on its lower end a pipe portion 1. From both side faces of the pipe portion 1 project axially extending flat vane portions 2. The penpoint core member 3 has an engaging tube portion 6 above the pipe portion 1, a connecting tube portion 8 above the engaging tube portion 6 and a collar portion 7, and an engaging projection 9 formed on the outer face of the engaging tube portion 6 by

undercutting. The penpoint core member 3 is fixed in a lower end opening of a main shaft 10, with the connecting tube portion 8 pressed thereinto. The penpoint core member 3 has an ink guide hole 12 communicating with an ink reservoir 11 in the main shaft 10. The ink guide hole 12 is open at the lower end of the pipe portion 1. A penpoint cover member 4 is made of an elastic porous material such as sponge, is formed in a hollow sack-like shape and is slid over the outer periphery of the penpoint core member 3 until it abuts against the bottom of the collar portion 7. A front shaft 13 is mounted on the lower end of the main shaft 10 such that it substantially covers the upper part of the penpoint cover member 4. The penpoint cover member 4 is held in place by being gripped between the inner face of the front shaft 13 and the outer periphery of the engaging tube portion 6 of the penpoint core member 3. The inner face of the front shaft 13 has two engaging projections 14. When the applicator is assembled the engaging projections 14 are located above and below the engaging projection 9 on the engaging tube 6, and all three engaging projections distort the penpoint cover member 4 into a sinuous shape so as to prevent it from being pulled off the penpoint core member 3. The ink in the ink reservoir 11 is discharged through the ink guide hole 12 and the lower end opening of the pipe portion 1 of the penpoint core member 3 and becomes impregnated in the penpoint cover member 4, thereby rendering the applicator ready for use. Further, with the vane portions 2 projecting from the pipe portion 1, there are formed spaces 5 between the outer face of the pipe portion 1 and the inner face of the penpoint cover member 4, and, with the painting instrument inverted, the ink flows through the spaces 5 to the rear of the pipe portion 1 to be properly impregnated not only into the front end portion of the penpoint cover member 4 but also into the rear end portion.

In operation, when drawing a narrow line, a narrow side (overlying one of the vane portions 2) of the penpoint cover member 4 is used. When drawing a broad line, a wide side (overlying a portion between the vane portions 2) of the penpoint cover member 4 is used.

When the penpoint cover member 4 is put on the outer peripheral portion of the penpoint core member 3, with the vane portions 2 projecting

from the penpoint core member 3, spaces 5 are provided between the outer face of the pipe portion 1 and the inner face of the penpoint cover member 4, and the liquid can easily flow rearwardly through the spaces 5. Thus, both narrow and broad lines may be painted and all of the exposed part of the cover member 4 is supplied with liquid. This permits good painting without blurs.

CLAIMS

1. A liquid applicator for applying a liquid, comprising:-  
a core member having a tubular pipe portion with a mouth for discharging the liquid and at least one rib mounted on the outer surface of the pipe portion and extending longitudinally thereof in order to define at least one groove for carrying the liquid away from the mouth of the pipe portion; and  
a cover member made of elastic porous material and located over the outer surface of the core member for absorbing the liquid directly from the mouth of the pipe portion and indirectly via the groove(s).
2. A liquid applicator according to claim 1, wherein the at least one rib comprises a pair of ribs on opposite sides of the pipe portion.
3. A liquid applicator according to claim 1 or 2, wherein each rib extends axially of the pipe portion.
4. A liquid applicator according to claim 3 when dependent on claim 2, wherein the width across the ribs is greater than the width across the parts of the pipe portion between the ribs, whereby the overlying cover member has wide sides and narrow sides suitable for drawing wide and narrow lines respectively.
5. A liquid applicator according to any one of claims 1 to 4, wherein the outer surface of the pipe portion has a circular cross-sectional profile.
6. A liquid applicator according to any one of claims 1 to 5, wherein each rib extends up to the level of the mouth of the pipe portion.
7. A liquid applicator substantially as herein described with reference to and as illustrated in Figures 1 to 3.
8. All novel features and combinations thereof.